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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Anita Lomartra
Cummings & Lockwood
PO Box 1960
New Haven, CT 06509-9958

EXAMINER

VU, THONG H

ART UNIT

PAPER NUMBER

2142

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/445,845

Applicant(s)

AITTOLA, TIMO

Examiner

Thong H Vu

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/11/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8,9,10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. Claims 1-47 are pending.
2. The abstract is missing.
3. In accordance to the telephone conference on 8/20/03, Thomas Payne, attorney for applicant, agreed to cancel claim 47.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1,5,12-15,17-21,24-25,27,30-35,37-38 are rejected under 35.S.C. 102(e) as being anticipated by Huitema [6,016,512].

5. As per claim 1, Huitema discloses a method for serving requests for Internet information files in an Internet caching system, comprising the steps of:

receiving, at a local Internet cache server, a user request from a user for an Internet information file [local cache server 310, Huitema Fig 6, col 3 lines 17-43];

in response to the received request, making a query for said information file, if said information file has not been cached by said local server [relay query, col 1 line 63- col 2 line 7];

in response to a reply to said query, making a file request for said information file, wherein said, file request is directed to a feeder means [cache server 340, Fig 6] if said

reply indicates that a central file server [root server 340, Fig 6; central cache server col 3 lines 27-43], storing cached Internet information files, has said information file cached; and

querying, from said feeder means in response to said file request, said central file server for said information file, in order to decrease the load on said central file server [Huitema col 5 lines 35-55, col 6 lines 31-55]. It is clearly the cache server shared the load on central root server by periodically updating process [col 4 line 52-col 5 line 13, col 6 lines 47-55]

6. As per claim 5, Huitema discloses said query is directed by said local cache server to said feeder means, which feeder means as a response returns said reply [cache server, Huitema col 5 lines 35-55, col 6 lines 31-55].

7. As per claim 12, Huitema discloses creating an indexed table having an entry for each Internet information file being cached at said central file server [index database, col 4 lines 35-64].

8. As per claim 13, Huitema discloses performing a search in said indexed table for said information file; and indicating in said reply to said query whether or not said information file was found during said search [matching query, col 1 lines 29-38].

9. As per claim 14, Huitema discloses said querying step comprises using the Structured Query Language (SQL) when querying said central file server for said information file as inherent feature of index database [col 4 lines 35-51].

10. As per claim 15, Huitema discloses selecting, based upon an original host name or IP-address of said information file [col 3 lines 56-col 4 line 2], a central file server out

of a set of central file servers, each server of said set being arranged to cache Internet information files with original host names or IP-addresses within a predefined range; and querying the selected central file server for said information file.

11. As per claim 17, Huitema discloses retrieving, at said local cache server, said information file from its origin server if said reply to said query indicates that said information file is not cached at said central file server; caching said information file at said local cache server; and updating said central file server by requesting a copy of said information file from said local cache server and caching said copy in said central file server.

12. As per claim 18, Huitema discloses an-arrangement in an Internet caching system, said system comprising at least one local cache server and at least one central file server, both of which servers stores cached Internet information files, which arrangement, for decreasing the load on said central file server, includes a Feeder communicating with said local cache server and with said central file server [local cache server 310, cache server 340, DNS root server 130, Huitema Fig 1, abstract], wherein said Feeder includes:

first means for receiving a request for an Internet information file from said local cache server [Huitema col 3 lines 27-43];

second means for deriving a query from an alphanumerical string received from said local cache server [hash coding, Huitema col 5 lines 48-col 6 line 46]; and

third means for querying said central file server for said Internet information file using said query derived by said second means [corresponding name and address records, Huitema col 3 lines 56-col 4 line 35].

13. As per claim 19, Huitema discloses said first means is arranged to operate in accordance with a layer three Internet protocol [IP address col 1 lines 40-55].

14. As per claim 20, Huitema discloses said third means is arranged to use the Structured Query Language (SQL) when querying for said Internet information file as inherent feature of central DNS database [Huitema col 4 lines 52-64].

15. As per claim 21, Huitema discloses said alphanumeric string is included in said request received from said local cache server using said query derived by said second means [hash coding, Huitema col 5 lines 48-col 6 line 46].

16. As per claim 24, Huitema discloses said Feeder includes fourth means for receiving a query for an Internet information file from said local cache server; and fifth means for providing said local cache server with a reply to the received query as inherent feature of cache server.

17. As per claim 25, Huitema discloses said fourth means and said fifth means are arranged to operate in accordance with a protocol used for communicating between Internet cache servers as inherent feature of cache server.

18. As per claim 27, Huitema discloses said alphanumeric string is included in said query received from said local cache server using said query derived by said second means [hash coding, Huitema col 5 lines 48-col 6 line 46].

19. As per claim 30, Huitema discloses said Feeder includes a table with a copy of the full index of all Internet information files cached at said-central file server [index database, central DNS database Huitema col 4 lines 36-64].

20. As per claim 31, Huitema discloses said reply to said received query by said fifth means is based on the content of said table [index database, central DNS database Huitema col 4 lines 36-64].

21. As per claim 32, Huitema discloses requesting means for requesting a copy of an Internet information file stored in a local cache server; and storing Means for storing the thereby received copy in a central file-server [replicator 440, Huitema Fig 4, col 5 lines 1-13].

22. As per claim 33, Huitema discloses said requesting means are arranged to request a copy of an information file from its origin server, if a local cache server storing said information file resides behind a firewall [replicator 440, Huitema Fig 4,, col 5 lines 1-13].

23. As per claim 34, Huitema discloses said Updater is arranged to communicate with said Feeder for receiving an order to request said copy of said information file a copy of this answer, Huitema col 1 lines 40-55].

24. As per claim 35, Huitema discloses said Updater includes a list of known uncachable information files, for which files a copy should not be requested as inherent feature of implemented program on DNS and not supporting platform [Huitema col 6 lines 20-30].

25. As per claim 37, Huitema discloses said Updater is implemented by a lower end computer and said central file server is implemented by a higher end computer as inherent feature of server computers.

26. As per claim 38, Huitema discloses said Updater and at least one Feeder are implemented by a single lower end computer as inherent feature of server computers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 2-4,22,26,28,39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huitema [6,016,512] in view of Wessels et al [ICP and the Squid Web Cache]

28. As per claim 39, Huitema discloses a Internet caching system, comprising:
a set of local Internet cache servers, wherein each local cache server is arranged to receive requests from users for Internet information files [local cache server 310, Huitema Fig 6, col 3 lines 17-43];

at least one central file server included in a central cache site and storing cached Internet information files [root server 340, Fig 6; central cache server col 3 lines 27-43];

feeder means interconnecting said set of local cache servers with said central file server [cache server 340, Fig 6]

However Huitema did not teach means for communicating with at least one local cache server in accordance with a protocol used for communicating between Internet cache servers and means for retrieving Internet information files from said central file server using data base queries, thereby decreasing the load on said central file server.

It is well-known in the art that Internet Cache protocol (ICP) was used among Web caches to improve the exchange queries and replies [Wessels, abstract, page 345, col1 line 41-col 2 line 15], thereby reducing the workload from Web server.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to realize that using the ICP or Cache Digest would provide the cache knows whether or not the neighbor holds the requested data. Doing so would improve the data flow process between Web client nodes and servers over the large network.

29. As per claim 40, Huitema-Wessels disclose said feeder means are included in said central cache site or root server [root server 130, Huitema, Fig 6]

30. As per claim 41, Huitema-Wessels disclose each of said feeder means includes a plurality of Feeders, each of said Feeder interconnecting a subset of said set of local cache servers with said central file server [cache server 340, root server 130, Huitema, Fig 6].

31. As per claim 42, Huitema-Wessels disclose said central cache site is arranged to serve a defined set of local cache servers, which set in turn serves a linguistically and culturally homogenous user community as inherent feature of central DNS cache server [Huitema col 3 lines 27-43].

32. As per claims 4 and 43, Huitema-Wessles disclose said protocol used is either the Internet Cache Protocol [ICP, Wessels abstract] or the Cache Digest as a well-known alternative to IPC [see Rousskov reference].

33. As per claim 44, Huitema-Wessels disclose each of said Feeder includes a table with a copy of the full index of all information files cached at said central cache site as inherent feature of index database and replicator [Huitema col 4 line 35-col 5 line 13].

34. As per claim 45, Huitema-Wessels disclose said central file server includes cached Internet information files having original host names within a predefined range [DNS servers, Huitema col 3 line 55-col 4 line 35].

35. As per claim 46, Huitema-Wessels disclose updater means, interconnecting said central file server with at least one local cache server of said set, for retrieving a copy of an Internet information file from its origin server or from said at least one local cache server and for storing said copy in said central file server [Huitema col 4 lines 35-51].

36. As per claim 2, Huitema-Wessels disclose said query is performed by said local cache server in accordance with a protocol used for communicating between Internet cache servers [Internet Cache Protocol (ICP), Wessels abstract].

37. As per claims 3 and 26, Huitema-Wessels disclose said protocol is the Internet Cache Protocol (ICP) [Wessels abstract].

38. As per claim 22, Huitema-Wessels disclose said query is derived from said alphanumeric string [hash coding, Huitema col 5 lines 48-col 6 line 46] and at least part of a header information field of said request received from said local cache server

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using said query derived by said second means [header, Wessels page 345 col 2 lines 24-51].

39. As per claim 28, Huitema-Wessels disclose said query derived by said second means is derived from said alphanumerical string [hash coding, Huitema col 5 lines 48-col 6 line 46] and at least part of a header information field of said query received from said local cache server [header, Wessels page 345 col 2 lines 24-51].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

40. Claims 6-11,16,23,29 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huitema [6,016,512] in view of Harel [5,873,081].

41. As per claim 10, Huitema discloses said file request provides an alphanumerical string associated with said information file, said string being used by said feeder means [Huitema corresponding name and address records, col 3 line 55-col 6 line 2]. However Huitema does not teach deriving a query number corresponding to said information file.

A skilled artisan would have motivation to improve the query process on Huitema system and found Harel's teaching. Harel, in a method and mechanism for filtering incoming electronic document against user queries, taught a filtering process including

a matching list containing term and query identifiers (or query number) which associated to the document delivery [Harel col 11 lines 15-33]

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated the query identifiers or query number associated to the delivery file as taught by Harel into the Huitema's apparatus in order to utilize the database query. Doing so would provide a quick and easy for searching and filtering data over a large system.

42. As per claim 6, Huitema-Harel disclose deriving, at said feeder means, a query number corresponding to said information file being concerned in said query [Harel col 11 lines 15-33].

43. As per claim 7, Huitema-Harel disclose using the derived query number when querying said central file server for said information file [query identifier, Harel col 11 lines 15-33].

44. As per claim 8, Huitema-Harel disclose said query provides an alphanumerical string associated with said information file, said string being used in said step of deriving said query number [query identifier, Harel col 11 lines 15-33].

45. As per claims 9 and 11, Huitema-Harel disclose said alphanumerical string is a Uniform Resource Locator (URL), said query number is derived from said URL and at least part of a header information field of said file request [query identifier, Harel col 11 lines 15-33].

46. As per claim 16, Huitema-Harel disclose selecting, based upon said query number derived for said information file [query identifier, Harel col 11 lines 15-33], a

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central file server out of a set of central file servers, each server of said set being arranged to cache Internet information files with corresponding query numbers within a predefined range [prefetcher means, Huitema col 2 lines 42-50]; and querying the selected central file server for said information file as inherent feature of accessing data to one or more DNS servers.

47. As per claims 23 and 29, Huitema-Harel disclose said query comprises a query number [query identifier, Harel col 11 lines 15-33], the query number being derived by applying a hash algorithm to said string and to said part of said header information field as inherent feature of hash coding [Huitema col 5 line 48-col 6 line 30].

48. As per claim 36, Huitema-Harel disclose said Feeder is implemented by a lower end computer and said central file server is implemented by a higher end computer as inherent feature of server computers.

49. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thong Vu, whose telephone number is (703)-305-4643.

The examiner can normally be reached on Monday-Thursday from 8:00AM- 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Powell, can be reached at (703) 305-9703.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9700.

Any response to this action should be mailed to: Commissioner of Patent and Trademarks, Washington, D.C. 20231 or faxed to :

After Final (703) 746-7238

Official: (703) 746-7239

Non-Official (703) 746-7240

Hand-delivered responses should be brought to Crystal Park 11,2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Thong Vu
Patent Examiner
Art Unit 2142

